November 30, 2018

To: Delta Science Staff

From: Richard B. Norgaard
ISB member

Re: Draft Minority Review of the Draft Second Delta Science Plan

The October 12, 2018 draft of the Second 5-Year Delta Science Plan is primarily an effort to coordinate and prioritize on-going and planned research of the individual state and federal agencies. It is not a science plan in the sense that a science plan would collectively identify the changes in research priorities and wholly new research directions needed and how these priorities and directions would be implemented over the next five years. A true Science Plan would keep Delta science ahead of the informational needs of policymakers and managers in an age of more rapid environmental change. The current draft of the ISB review of the effort to coordinate on-going research acknowledges this situation, but it does not insist that a true reckoning of future science needs and a plan to meet them is what is called for in a science plan. This minority review echoes earlier Board calls for a true science plan. This will likely require several years of additional concerted effort.

Coordinating and prioritizing the efforts of the key state and federal research efforts in the Delta is a major and much needed effort. Working together in real time is likely a prerequisite to envisioning and planning to meet future research needs. The current effort is certainly a gain. Acknowledging the even greater challenges of preparing a Delta Science Plan may well galvanize the much needed additional envisioning, creativity, and deeper cooperation.

The preparation of a true Delta science plan would necessarily include the participation of academic, NGO and governmental scientists working in the Delta. The plan would acknowledge and seek to learn through estuarine research elsewhere in order to assure that California Delta science is the best available. It would identify opportunities to expand the capabilities of existing personnel and recruit new personnel to meet future needs. It would identify research facilities needed in the future and plans for obtaining them. These features are weak to non-existent in the current effort.

The Delta ISB initiated the idea of a science plan as a part of The Delta Plan and has frequently proffered advice on how to do Delta science better in the future. A recurr-

ing theme has been that too much Delta science has been Court-driven and short-run. In March 2012 the Board noted:

> *We were disturbed to hear that many scientists and managers within water and environmental agencies are not looking and planning very far into the future. Myopic decisions during times of rapid environmental change can exacerbate problems, reducing the effectiveness of mitigation activities. One participant insightfully argued that Delta scientists will just be monitoring a declining ecosystem if scientists and managers do not develop strategies for addressing climate change and other long-term drivers. Many participants felt we could play an important watchdog role by stressing the long-term perspective*.[1]

The Board's 4th broad observation accordingly in that report was:

> ***Taking the Long View.*** *During the meetings we heard relatively little from scientists and managers about how they were addressing critical drivers generating foreseeable, long-term problems. Most of the discussion focused on the most immediate issues. Addressing foreseeable long-term changes requires that scientists and managers devise management models that take account of such changes.*

Planning is about looking toward the future and setting new directions. The first policy perspective of the editors' summary chapter of the *2016 State of Bay-Delta Science* argued for more Delta science being undertaken with a longer time perspective in order to more effectively work with more rapid change and greater uncertainties:

> *The "state" of Delta science is held back by, and needs to push beyond, its tendency to focus on near-term issues and crises. Taking a longer, 50-year viewpoint was part of the Delta Vision exercise. That kind of long-range thinking needs to be incorporated into the whole Delta science and management endeavor. Progress towards that goal is lagging.*[2]

The Delta ISB and the editors of the *State of Bay-Delta Science* have been very clear about the need for more Delta science addressing the long term. A true Delta Science Plan is needed now more than ever. Greater effort is needed to move effectively in this direction.

[1] Key Issues for Delta Science: A Report of the Delta Independent Science Board, March 14, 2012, page 6.

[2] Healey, Michael, Michael Dettinger, and Richard B. Norgaard. 2016. Perspectives on Bay-Delta Science*. San Francisco Estuary and Watershed Science* **14**(4)14.